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ABSTRACT

This study was designed to accomplish two interrelated objectives: first, to investigate the existing relationship between selected factors previously identified as being significant in attempting to predict military service losses during first-term service and second, to make available to qualified users a comprehensive data base for further analysis as specific questions in this area arise. The data base developed is described in detail and methodologies for interpretation are suggested in an analysis of the effects of mental category classification, age, and preservice education level on potential airman attrition for undesirable causes. All factors cited were found to show a significant relationship with the existing loss rate of first-term airmen. (Included in the document are a two-item bibliography, three appendixes, and six graphs.) (Author/BP)

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AFHRL-TR-73-37

AIR FORCE HUMAN RESOURCES LABORATORY

# DEVELOPMENT OF A DATA BASE FOR DIRECT ANALYSIS OF AIRMEN LOSS RATES

By

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OCCUPATIONAL RESEARCH DIVISION
Lackland Air Force Base, Texas 78236

December 1973

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This technical report has been reviewed and approved.

RAYMOND E. CHRISTAL, Chief
Occupational Research Division

Approved for publication.

HAROLD E. FISCHER, Colonel, USAF
Commander

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# DEVELOPMENT OF A DATA BASE FOR DIRECT ANALYSIS OF AIRMEN LOSS RATES

## I. INTRODUCTION

The loss of airmen during their initial term of enlistment, because of an unacceptable adaptation to military life or some other specific undesirable behavior resulting in early attrition, represents a sizeable loss to the United States Air Force in terms of training dollars, reduced manpower availability, and replacement recruiting costs. Similar problems are faced by all other military services. With the continually rising personnel costs which may be anticipated, particularly under the all-volunteer force structure, maximum accession of those personnel who may be expected to productively serve their total enlistment period becomes an even more urgent requirement than in the past.

In reviewing the research accomplished during the past 15 years, to identify those factors which could be validly incorporated in screening procedures designed to minimize the number of individuals who would be eliminated for unsuitability at a later date, Guinn (1973) found "a general consenus that level of education, age, and general intelligence level are highly predictive of military adjustment [p.2]". In addition to providing a comprehensive literature review, she investigated the relationship of three factors: age at enlistment, pre-service educational achievement, and AFQT score at entry, with a criterion of successful military performance. All three variables were found to be meaningfully related with military service adaptability among airmen entering the Air Force in 1965. These results closely correspond with those reported in an earlier study by Flyer (1959) where all three variables were significantly related to unsuitability discharge rates among 1956 airmen accessions.

## II. STATEMENT OF THE PROBLEM

Historical data, which includes pre-service educational levels, AFQT test score, age at entry, and other potentially relevant variables, have been maintained on all Air Force personnel with final disposition data for those members separated. The immediate problem this report addresses is two-fold: first, to formulate a data base which may be easily analyzed and interpreted with regard to personnel management decisions on Air Force personnel input requirements; and second, to provide a useful interpretation of these historical data in terms of quantifying the effects of certain specified attributes on potentially successful adaptation to the military environment, hence providing a cost effective basis for policy decisions regarding Air Force airmen entry requirements.

## III. APPROACH

The entire Air Force male airman input, initially entering the Air Force during the period 1958 through 1969, was selected for study and represents a total of 1,139,827 airmen. Because of invalid data used in the computation of age at entry, 829 cases were excluded, resulting in a total population for analysis and reporting equal to 1,138,929 male airmen. The data base reported is, for all practical purposes, equivalent to the entire population of interest.

Each individual within this population was then categorized as belonging in one of five levels of mental category (as determined by AFQT score), and either as a high school graduate or non-graduate, with age at enlistment equal to 17 or older. Race as Black or Non-Black was included as a categorization for possible future study. Selection of these variables for analysis was based on the previously cited research which evidenced some degree of consistent relationship between these variables and military service adaptability. Specific descriptions of each categorical restriction is provided in Appendix A together with the airman input population by categories for the total period 1958 through 1969 and two sub-periods, 1958 through 1961, and 1967 through 1969. Both subtotals reflect periods of relatively consistent specification and application of minimum personnel entry qualification standards. These required entry standards, however, do evidence changes in policy during the 12-year period and, therefore, must be interpreted with some caution, particularly because of the relatively low number of cases in some categories for certain years. Even so, some of the basic changes in applied entry requirements are dramatically reflected through an inspection of the relative percentages of airmen within specific categories, when compared across the differing time periods. For example, non-high school graduates (Category 51) represented approximately 27.5 percent of the total airmen

input during 1958 through 1961, whereas, they accounted for only 5.6 percent of the total input for 1967 through 1969. Input airmen aged 17 at entry (Category 89) represented 22.4 percent of the total accessions during the earlier period, but only about 2 percent of the 1967 through 1969 total. The effect of Project 100,000 is seen in the proportional change of Mental Category IV personnel with AFQT score less than 20 (Category 45). During the earlier period only .02 percent of the input airmen scored at this level. During the 1967 through 1969 period, 7.72 percent of all airmen belonged within this category with proportionally equivalent reductions being reflected in each of the other mental categories. It should be noted that the evidenced changes in entry requirements had little effect on the total racial input proportions. While high school graduation became a real requirement, and could, therefore, be considered to negatively affect the potential rate of Black airmen accession, their total force proportion reflects a slight increase from 8.36 to 10.76 percent for the two specific time periods analyzed.

To consider retention aspects, the percentage of airmen accessions within each defined category and entry period who were separated from the service for undesirable reasons was computed and reported as cumulative percent losses for each three-month period following completion of Air Force basic training. Loss rates were computed for up to 42 months for both the total and 1958 through 1961 subgroup. Due to the time limitations, the upper limit for the 1967 through 1969 subgroup is 30 months. In all cases, loss data were computed using weighted averages based on the total number of personnel entered and for whom losses could have occurred. Maximum periods for loss determination was six months for the 1969 input, 18 months for the 1968 input, 30 months for the 1967 input and 42 months for all earlier inputs. A complete narrative description of those actions resulting in an undesirable discharge, or defined for the purpose of this study as a loss for undesirable causes, is provided in Appendix B.

For comparative purposes cumulative percentages reflecting the total loss for all causes were also computed for each group. The complete set of cumulative loss rates based on losses for undesirable causes and losses for all causes for each group and category is available from the Air Force Human Resources Laboratory's Occupational Research Division, Lackland AFB, Texas 78236, upon request. Similar tabulated data for each individual year group and yearly airmen input within each specific category are also available. An example of the data format for the total sample losses due to undesirable causes is shown in Appendix C. These data posses the potential to answer many specific questions which management must ask in most appropriately determining minimum aptitude and entry qualifications for the enlisted force. Certain specific applications and the supporting data with an appropriate analytical methodology are reported with regards to those previously selected variables of interest in the results section.

## IV. RESULTS

Data reflecting the cumulative percent of losses for undesirable causes as a function of the mental category are shown in Figure 1.

This graph clearly indicates the systematic relationship between mental category and probability of loss for undesirable causes. Early attrition is seen to be directly related to mental category. For comparative purposes, loss rate by mental category for all reasons is shown in Figure 2 for the total population.

The sudden upsurge beginning about the 39th month following completion of basic training is due to the varied early-out opportunities which have historically been available to the enlisted force and are not considered losses due to undesirable causes. This characteristic is common to all cumulative percent loss rates when the loss is based on all possible reasons. Generally, when comparing Figures 1 and 2, it is evident that losses for undesirable causes represent a highly consistent and stable portion of the total loss regardless of the mental category. Inspection of the cumulative percent loss values shows that undesirable losses closely approximate 50 percent of total losses.

Figures 3 and 4 reflect any existing longitudinal differences in the loss rate for airmen entering the Air Force under differing accession policies and entry periods. A consistent trend in losses for undesirable causes as a function of the mental category is apparent. The highly significant effect on loss rate as a function of time of entry into the Air Force is obvious and may be interpreted to evidence the desirable influence of higher entry standards as well as improved managerial policies.

To determine more clearly the interrelationship between mental category and pre-service

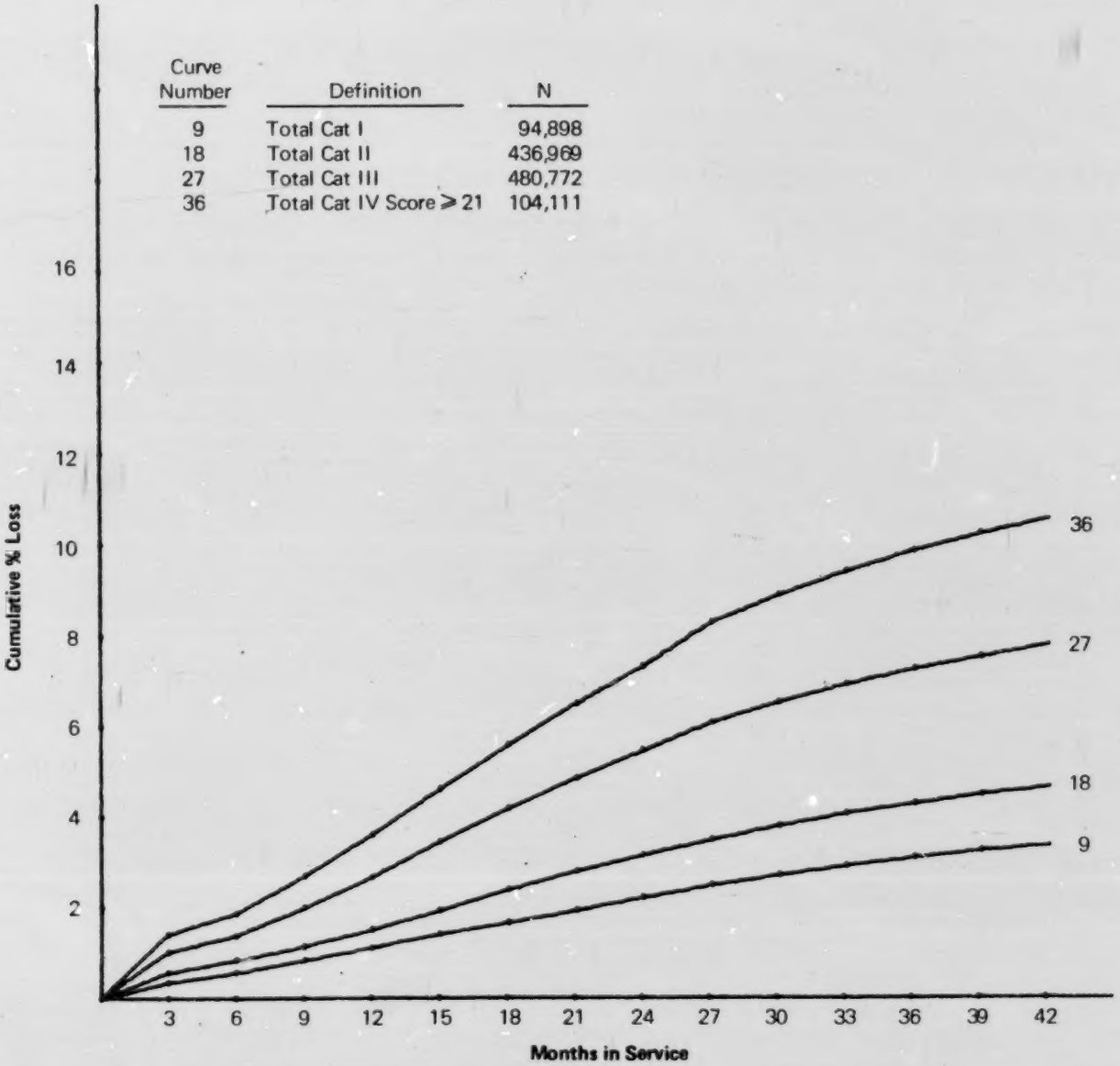


*Fig. 1.* **Elimination for undesirable causes 1958 – 1969 input.**

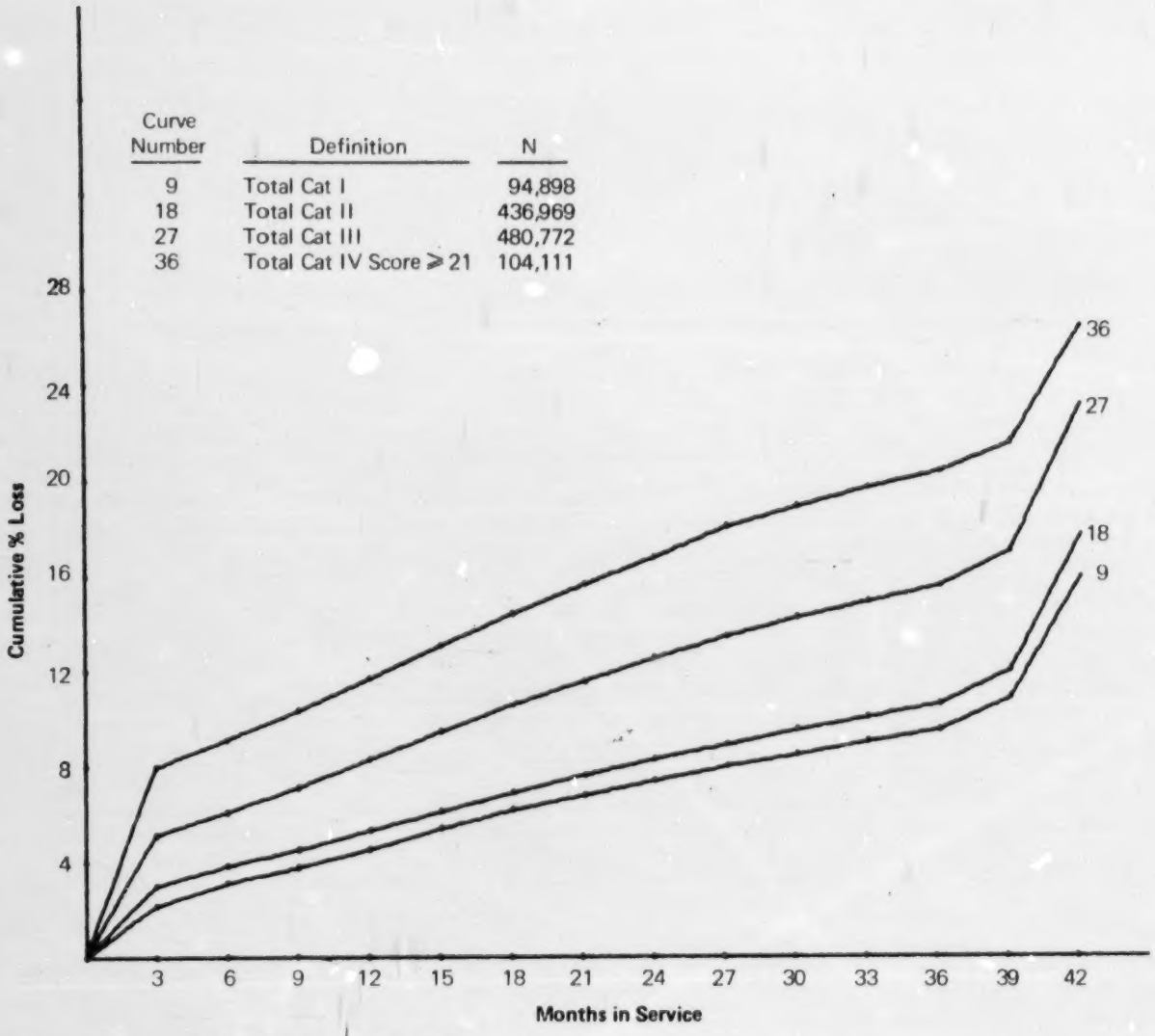


*Fig. 2.* **Elimination for all causes 1958 – 1969 input.**

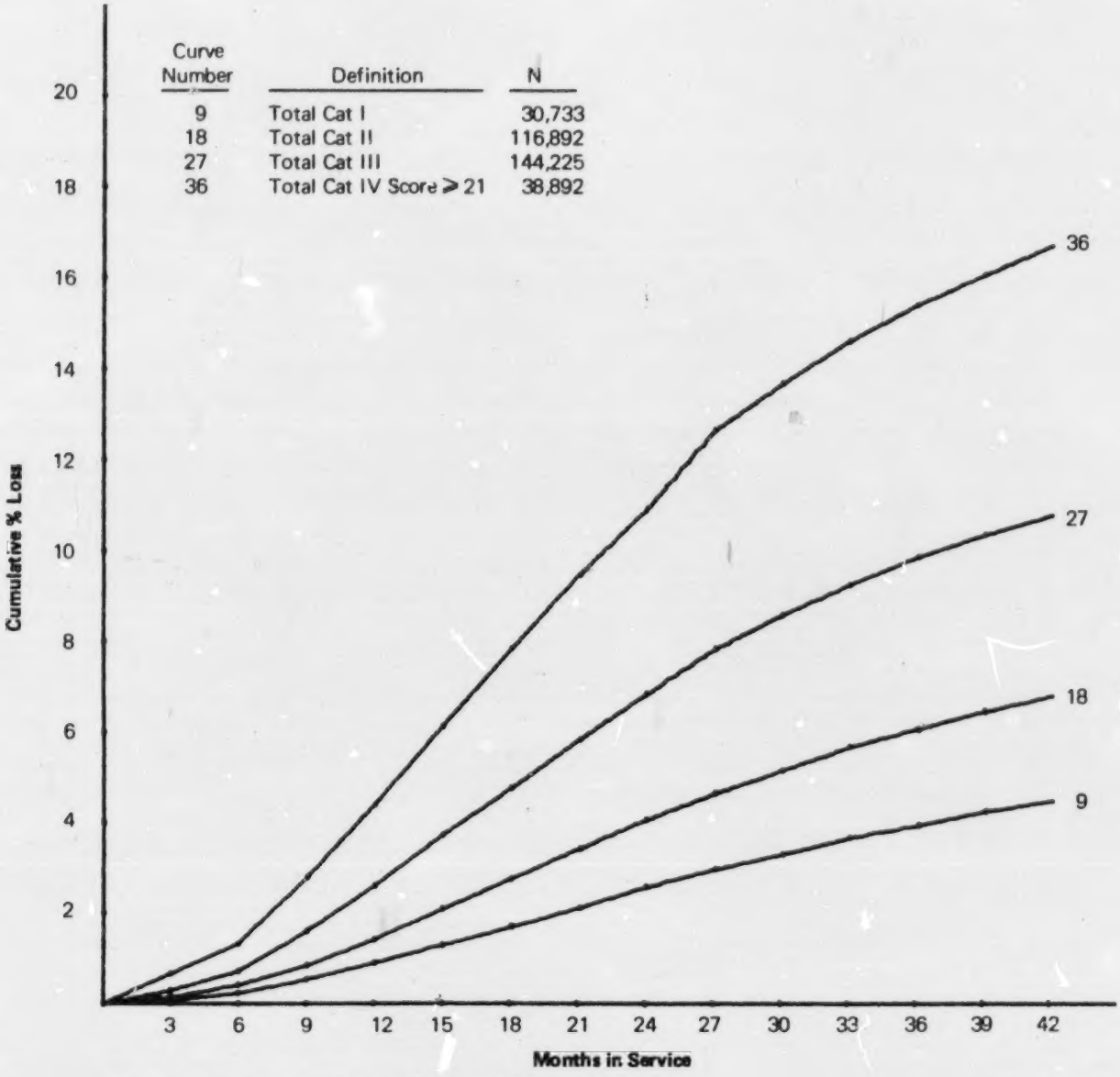


*Fig. 3.* **Elimination for undesirable causes 1958 – 1961 input.**

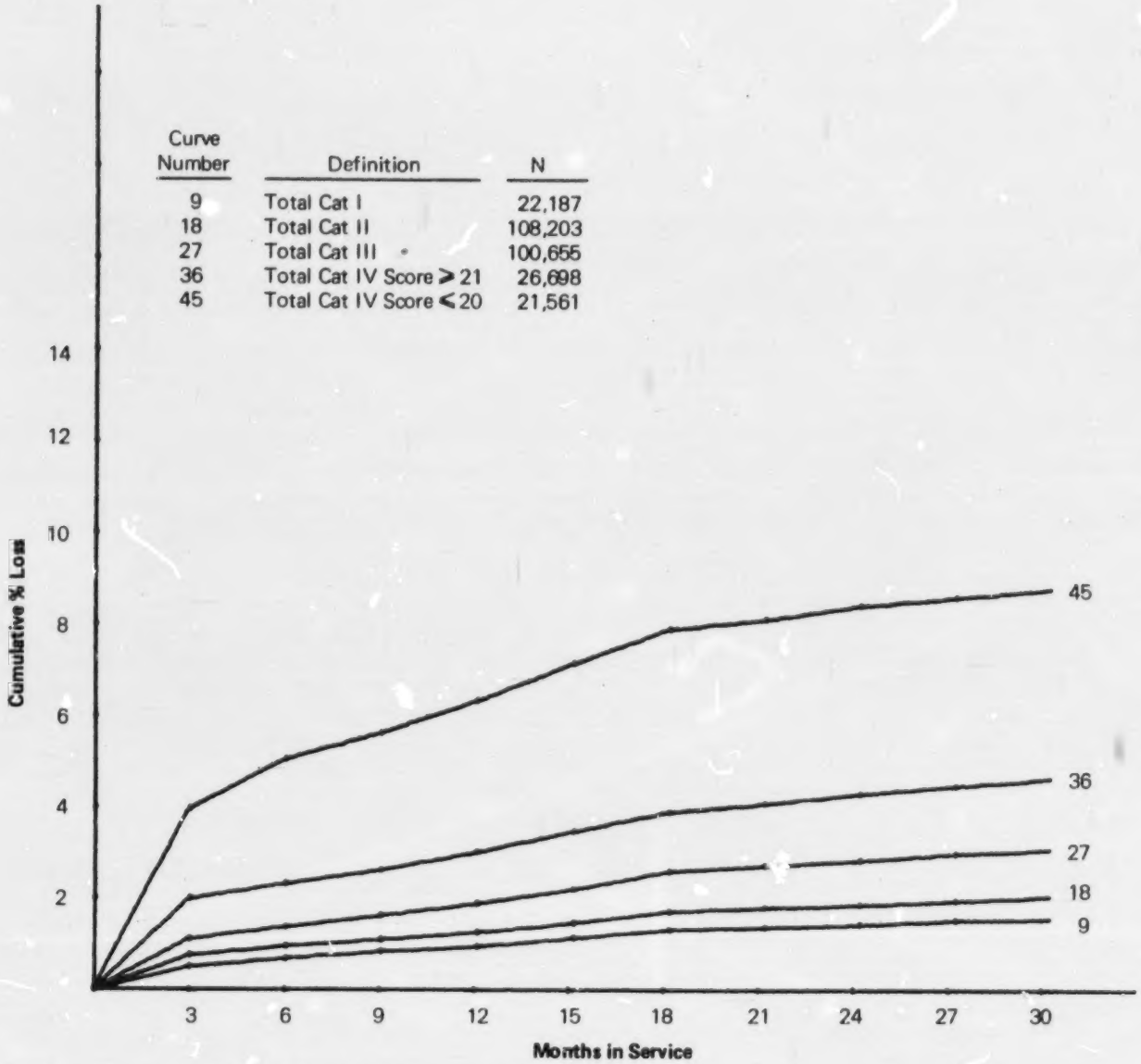


*Fig. 4.* **Elimination for undesirable causes 1967 – 1 59 input.**

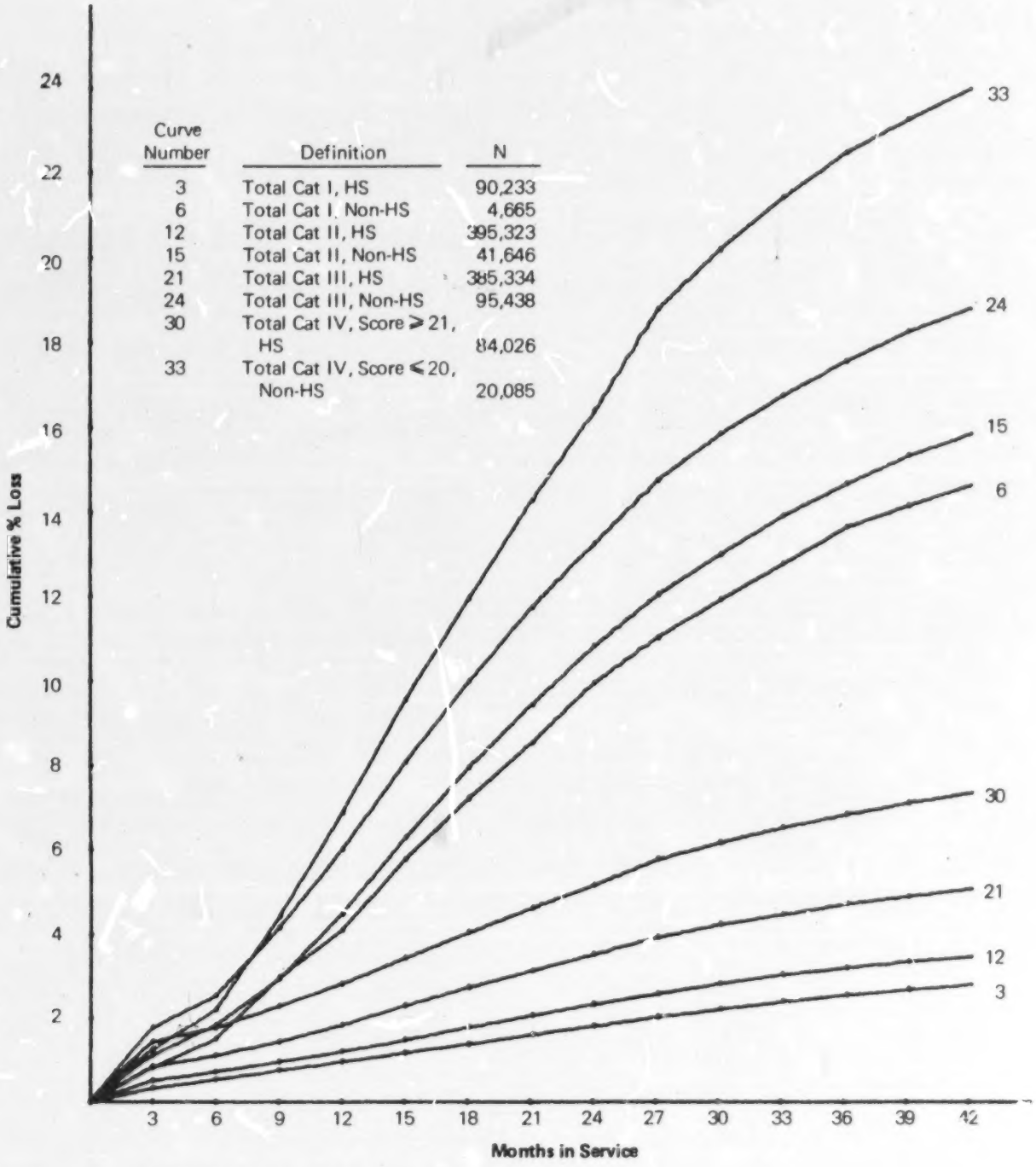


*Fig. 5.* **Elimination for undesirable causes 1958 – 1969 input.**

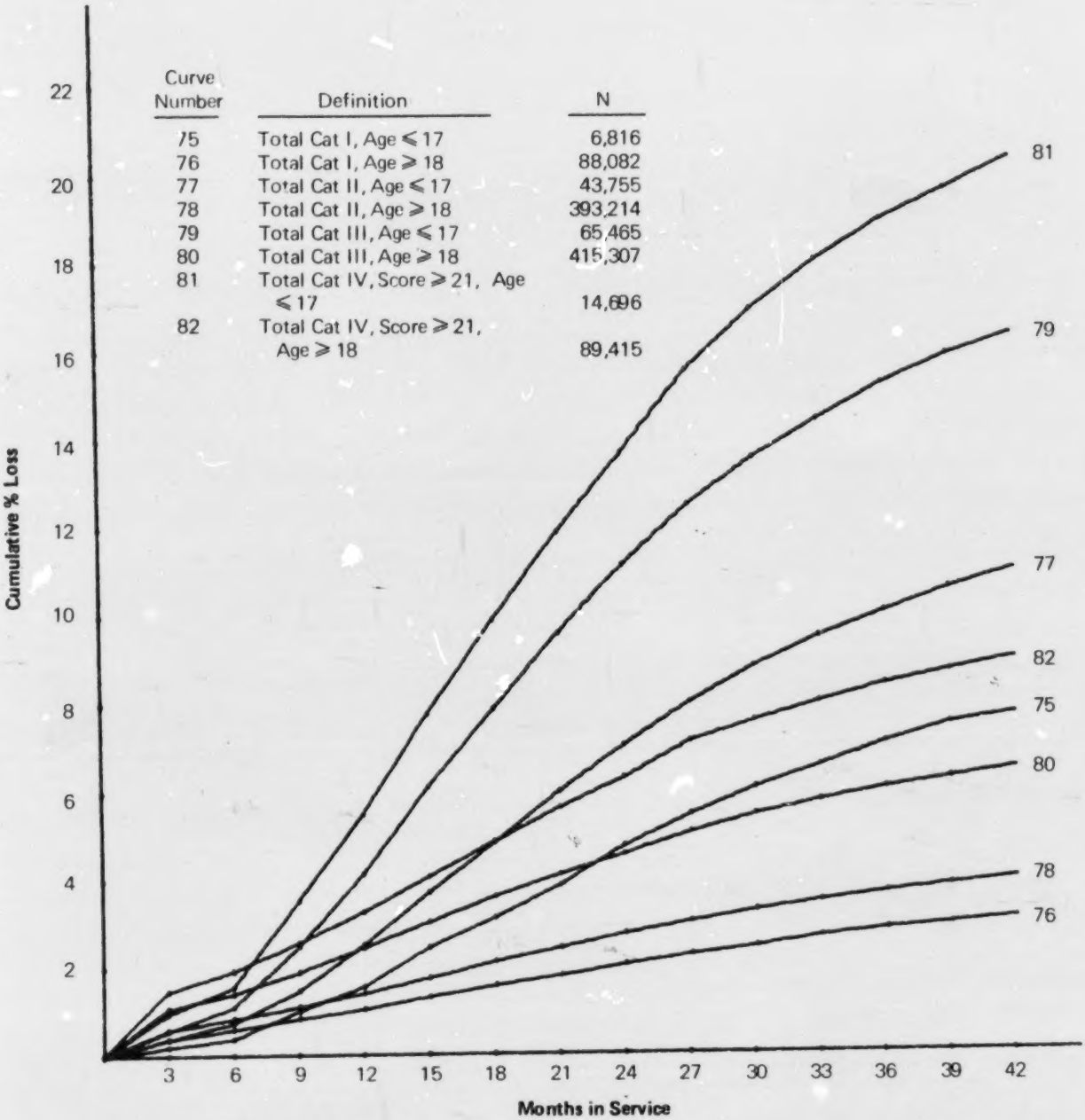


*Fig. 6.* **Elimination for undesirable causes 1958 – 1969 input.**

educational achievement, Figure 5 presents loss rates for undesirable causes, where four mental categories are further sub-divided into high school graduates and non-graduates.

This graph dramatically reflects the extremely high predictive efficiency of high school graduation on Air Force airmen retention. Consistently across all mental categories, non-high school graduates show much greater loss rates for undesirable causes than do high school graduates. In fact, it should be noted that Mental Category IV high school graduates historically show better retention potential than do Mental Category I non-high school graduates.

Figure 6 reflects similar loss rates for undesirable causes where the four mental categories are further subdivided into age at entry of 17 or less and age at entry of 18 or greater.

These data clearly indicate the effect of age at entry on potential airmen retention. For all mental categories, age is directly related to expected retention and airmen who are age 17 at entry into the Air Force consistently show much higher losses for undesirable reasons than do their older peers.

## V. DISCUSSION AND CONCLUSIONS

The development of an extensive data base providing an easily accessible source of information and allowing direct interpretation of historical loss data for both undesirable causes and all reasons combined has been described in detail. The methodology for data development has the potential for providing personnel managers vitally needed information for determining appropriate airmen accession standards and recruiting policies.

The data base was formulated in this study to provide specific information regarding the effect of mental category, pre-service educational level, and age at entry on historical loss rates for undesirable causes. The data definitively indicate that all cited factors are highly related to existing airmen retention probability. Mental category is shown to be directly related to undesirable losses with the lower mental categories evidencing considerably greater loss rates.

High school graduation status is shown to be of equal or greater importance in predicting successful full-term airmen retention. The data clearly indicate that Mental Category IV airmen who have attained a high school diploma are less apt to be eliminated from the service for undesirable reasons than any airman who has not graduated from high school irregardless of his mental category. Similar interrelationships are shown for the age variable. Irrespective of the mental category, the younger or 17 year-old airman evidences considerably greater probability for separation for undesirable causes during his first enlistment than does his older peers.

The availability of the data base described and the results of this study have the potential to provide both necessary and meaningful information in determining desired future airmen enlistment standards.

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**Flyer, E.S.** *Factors relating to discharge for unsuitability among 1956 airman accessions to the Air Force.* WADC-TN-59-201, AD-230 758. Lackland AFB, Tex.: Personnel Laboratory, Wright Air Development Center, December 1959.

**Guinn, N.** *Factors related to adaptability to military service among 1965 airman accessions.* AFHRL-TR-73-42, AD-768 328. Lackland AFB, Tex.: Personnel Research Division, Air Force Human Resources Laboratory, September 1973.

## *APPENDIX A:* AIRMAN CATEGORIZATION AND ENTRY NUMBERS

| Category No. | Category Definition | 1958-1961 | | 1967-1969 | | 1958-1969 | |
|---|---|---|---|---|---|---|---|
| | | No. | % | No. | % | No. | % |
| 1 | Cat I, HS, B | 165 | 0.04 | 79 | 0.03 | 433 | 0.04 |
| 2 | Cat I, HS, Non-B | 27,648 | 8.35 | 21,891 | 7.84 | 89,800 | 7.88 |
| 3 | Total Cat I, HS | 27,813 | 8.41 | 21,970 | 7.87 | 90,233 | 7.92 |
| 4 | Cat I, Non-HS, B | 11 | 0.0* | 2 | 0.0* | 27 | 0.0* |
| 5 | Cat I, Non-HS, Non-B | 2,909 | 0.88 | 215 | 0.08 | 4,638 | 0.41 |
| 6 | Total Cat I, Non-HS | 2,920 | 0.88 | 217 | 0.08 | 4,665 | 0.41 |
| 7 | Total Cat I, B | 176 | 0.05 | 81 | 0.03 | 460 | 0.04 |
| 8 | Total Cat I, Non-B | 30,557 | 9.24 | 22,106 | 7.91 | 94,438 | 8.29 |
| 9 | Total Cat I | 30,733 | 9.29 | 22,187 | 7.94 | 94,898 | 8.33 |
| 10 | Cat II, HS, B | 2,446 | 0.74 | 2,042 | 0.73 | 9,340 | 0.82 |
| 11 | Cat II, HS, Non-B | 93,440 | 28.25 | 103,620 | 37.10 | 385,983 | 33.89 |
| 12 | Total Cat II, HS | 95,886 | 28.99 | 105,662 | 37.83 | 395,323 | 34.71 |
| 13 | Cat II, Non-HS, B | 401 | 0.12 | 140 | 0.05 | 978 | 0.09 |
| 14 | Cat II, Non-HS, Non-B | 20,605 | 6.23 | 2,401 | 0.86 | 40,668 | 3.57 |
| 15 | Total Cat II, Non-HS | 21,006 | 6.35 | 2,541 | 0.91 | 41,646 | 3.66 |
| 16 | Total Cat II, B | 2,847 | 0.86 | 2,182 | 0.78 | 10,318 | 0.91 |
| 17 | Total Cat II, Non-B | 114,045 | 34.48 | 106,021 | 37.96 | 426,651 | 37.46 |
| 18 | Total Cat II | 116,892 | 35.34 | 108,203 | 38.74 | 436,969 | 38.37 |
| 19 | Cat III, HS, B | 11,822 | 3.57 | 9,712 | 3.48 | 48,819 | 4.29 |
| 20 | Cat III, HS, Non-B | 84,740 | 25.62 | 84,590 | 30.29 | 336,515 | 29.55 |
| 21 | Total Cat III, HS | 96,562 | 29.19 | 94,302 | 33.76 | 385,334 | 33.83 |
| 22 | Cat III, Non-HS, B | 3,220 | 0.97 | 1,243 | 0.44 | 8,666 | 0.76 |
| 23 | Cat III, Non-HS, Non-B | 44,443 | 13.44 | 5,110 | 1.83 | 86,772 | 7.62 |
| 24 | Total Cat III, Non-HS | 47,663 | 14.40 | 6,353 | 2.27 | 95,438 | 8.38 |
| 25 | Total Cat III, B | 15,042 | 4.55 | 10,955 | 3.92 | 57,485 | 5.05 |
| 26 | Total Cat III, Non-B | 129,183 | 39.05 | 89,700 | 32.12 | 423,287 | 37.17 |
| 27 | Total Cat III | 144,225 | 43.60 | 100,655 | 36.04 | 480,772 | 42.21 |
| 28 | Cat IV, Score $\geq$ 21, HS, B | 6,534 | 1.98 | 7,666 | 2.74 | 29,202 | 2.56 |
| 29 | Cat IV, Score $\geq$ 21, HS, Non-B | 12,923 | 3.91 | 18,583 | 6.65 | 54,824 | 4.81 |
| 30 | Total Cat IV, Score $\geq$ 21, HS | 19,457 | 5.88 | 26,249 | 9.40 | 84,026 | 7.38 |
| 31 | Cat IV, Score $\geq$21, Non-HS, B | 3,041 | 0.92 | 79 | 0.03 | 3,178 | 0.28 |
| 32 | Cat IV, Score $\geq$ 21, Non-HS, Non-B | 16,394 | 4.96 | 370 | 0.13 | 16,907 | 1.48 |
| 33 | Total Cat IV, Score $\geq$ 21, Non-HS | 19,435 | 5.88 | 449 | 0.16 | 20,085 | 1.76 |
| 34 | Total Cat IV, Score $\geq$ 21, B | 9,575 | 2.89 | 7,745 | 2.77 | 32,380 | 2.84 |
| 35 | Total Cat IV, Score $\geq$ 21, Non-B | 29,317 | 8.86 | 18,953 | 6.79 | 71,731 | 6.30 |
| 36 | Total Cat IV, Score $\geq$ 21 | 38,892 | 11.76 | 26,698 | 9.56 | 104,111 | 9.14 |
| 37 | Cat IV, Score $\leq$ 20, HS, B | 4 | 0.0* | 7,178 | 2.57 | 7,377 | 0.65 |
| 38 | Cat IV, Score $\leq$ 20, HS, Non-B | 34 | 0.01 | 8,289 | 2.97 | 8,677 | 0.76 |
| 39 | Total Cat IV, Score $\leq$ 20, HS | 38 | 0.01 | 15,467 | 5.54 | 16,054 | 1.41 |
| 40 | Cat IV, Score $\leq$ 20, Non-HS, B | - | - | 1,924 | 0.69 | 1,924 | 0.17 |
| 41 | Cat IV, Score $\leq$ 20, Non-HS, Non-B | 16 | 0.0* | 4,170 | 1.49 | 4,201 | 0.37 |
| 42 | Total Cat IV, Score $\leq$ 20, Non-HS | 16 | 0.0* | 6,094 | 2.18 | 6,125 | 0.54 |
| 43 | Total Cat IV, Score $\leq$ 20, B | 4 | 0.0* | 9,102 | 3.26 | 9,301 | 0.82 |
| 44 | Total Cat IV, Score $\leq$ 20, Non-B | 50 | 0.02 | 12,459 | 4.46 | 12,878 | 1.13 |
| 45 | Total Cat IV, Score $\leq$ 20 | 54 | 0.02 | 21,561 | 7.72 | 22,179 | 1.95 |
| 46 | Total HS, B | 20,971 | 6.34 | 26,677 | 9.55 | 95,171 | 8.36 |
| 47 | Total HS, Non-B | 218,785 | 66.14 | 236,973 | 84.84 | 875,799 | 76.90 |
| 48 | Total Non-HS, B | 6,673 | 2.02 | 3,388 | 1.21 | 14,773 | 1.30 |
| 49 | Total Non-HS, Non-B | 84,367 | 25.50 | 12,266 | 4.39 | 153,186 | 13.45 |
| 50 | Total HS | 239,756 | 72.48 | 263,650 | 94.40 | 970,970 | 85.25 |

Appendix A *(Continued)*

| Category No. | Category Definition | 1958-1961 No. | 1958-1961 % | 1967-1969 No. | 1967-1969 % | 1958-1969 No. | 1958-1969 % |
|---|---|---|---|---|---|---|---|
| 51 | Total Non-HS | 91,040 | 27.52 | 15,654 | 5.60 | 167,959 | 14.75 |
| 52 | Total B | 27,644 | 8.36 | 30,065 | 10.76 | 109,944 | 9.65 |
| 53 | Total Non-B | 303,152 | 91.64 | 249,239 | 89.24 | 1,028,985 | 90.35 |
| 54 | GRAND TOTAL | 330,796 | | 279,304 | | 1,138,929 | |
| 55 | Cat I, HS, Age ≤ 17 | 2,983 | 0.90 | 228 | 0.08 | 5,104 | 0.45 |
| 56 | Cat I, HS, Age ≥ 18 | 24,830 | 7.51 | 21,742 | 7.78 | 85,129 | 7.47 |
| 57 | Cat I, Non-HS, Age ≤ 17 | 1,339 | 0.40 | 1 | 0.0* | 1,712 | 0.15 |
| 58 | Cat I, Non-HS, Age ≥ 18 | 1,581 | 0.48 | 216 | 0.08 | 2,953 | 0.26 |
| 59 | Cat II, HS, Age ≤ 17 | 12,335 | 3.73 | 2,001 | 0.72 | 27,689 | 2.43 |
| 60 | Cat II, HS, Age ≥ 18 | 83,551 | 25.26 | 103,661 | 37.11 | 367,634 | 32.28 |
| 61 | Cat II, Non-HS, Age ≤ 17 | 10,559 | 3.19 | 12 | 0.0* | 16,066 | 1.41 |
| 62 | Cat II, Non-HS, Age ≥ 18 | 10,447 | 3.16 | 2,529 | 0.91 | 25,580 | 2.25 |
| 63 | Cat III, HS, Age ≤ 17 | 12,215 | 3.69 | 2,180 | 0.78 | 29,196 | 2.56 |
| 64 | Cat III, HS, Age ≥ 18 | 84,347 | 25.50 | 92,122 | 32.98 | 356,138 | 31.27 |
| 65 | Cat III, Non-HS, Age ≤ 17 | 23,899 | 7.22 | 13 | 0.0* | 36,269 | 3.18 |
| 66 | Cat III, Non-HS, Age ≥ 18 | 23,764 | 7.18 | 6,340 | 2.27 | 59,169 | 5.20 |
| 67 | Cat IV, Score ≥ 21, HS, Age ≤ 17 | 2,083 | 0.63 | 752 | 0.27 | 5,930 | 0.52 |
| 68 | Cat IV, Score ≥ 21, HS, Age ≥ 18 | 17,374 | 5.25 | 25,497 | 9.13 | 78,096 | 6.86 |
| 69 | Cat IV, Score ≥ 21, Non-HS, Age ≤ 17 | 8,717 | 2.64 | 2 | 0.0* | 8,766 | 0.77 |
| 70 | Cat IV, Score ≥ 21, Non-HS, Age ≥ 18 | 10,718 | 3.24 | 447 | 0.16 | 11,319 | 0.99 |
| 71 | Cat IV, Score ≤ 20, HS, Age ≤ 17 | 2 | 0.0* | 262 | 0.09 | 276 | 0.02 |
| 72 | Cat IV, Score ≤ 20, HS, Age ≥ 18 | 36 | 0.01 | 15,205 | 5.44 | 15,778 | 1.39 |
| 73 | Cat IV, Score ≤ 20, Non-HS, Age ≤ 17 | 5 | 0.0* | 11 | 0.0* | 19 | 0.0* |
| 74 | Cat IV, Score ≤ 20, Non-HS, Age ≥ 18 | 11 | 0.0* | 6,083 | 2.18 | 6,106 | 0.54 |
| 75 | Cat I, Age ≤ 17 | 4,322 | 1.31 | 229 | 0.08 | 6,816 | 0.60 |
| 76 | Cat I, Age ≥ 18 | 26,411 | 7.98 | 21,958 | 7.86 | 88,082 | 7.73 |
| 77 | Cat II, Age ≤ 17 | 22,894 | 6.92 | 2,013 | 0.72 | 43,755 | 3.84 |
| 78 | Cat II, Age ≥ 18 | 93,998 | 28.42 | 106,190 | 38.02 | 393,214 | 34.52 |
| 79 | Cat III, Age ≤ 17 | 36,114 | 10.92 | 2,193 | 0.79 | 65,465 | 5.75 |
| 80 | Cat III, Age ≥ 18 | 108,111 | 32.68 | 98,462 | 35.25 | 415,307 | 36.46 |
| 81 | Cat IV, Score ≥ 21, Age ≤ 17 | 10,800 | 3.26 | 754 | 0.27 | 14,696 | 1.29 |
| 82 | Cat IV, Score ≥ 21, Age ≥ 18 | 28,092 | 8.49 | 25,944 | 9.29 | 89,415 | 7.85 |
| 83 | Cat IV, Score ≤ 20, Age ≤ 17 | 7 | 0.0* | 273 | 0.10 | 295 | 0.03 |
| 84 | Cat IV, Score ≤ 20, Age ≥ 18 | 47 | 0.01 | 21,288 | 7.62 | 21,884 | 1.92 |
| 85 | Total HS, Age ≤ 17 | 29,618 | 8.95 | 5,423 | 1.94 | 68,195 | 5.99 |
| 86 | Total HS, Age ≥ 18 | 210,138 | 63.52 | 258,227 | 92.45 | 902,775 | 79.27 |
| 87 | Total Non-HS, Age ≤ 17 | 44,519 | 13.46 | 39 | 0.01 | 62,832 | 5.52 |
| 88 | Total Non-HS, Age ≥ 18 | 46,521 | 14.06 | 15,615 | 5.59 | 105,127 | 9.23 |
| 89 | Total Age ≤ 17 | 74,137 | 22.41 | 5,462 | 1.96 | 131,027 | 11.50 |
| 90 | Total Age ≥ 18 | 256,659 | 77.59 | 273,842 | 98.04 | 1,007,902 | 88.50 |

Category I through IV = Mental Category as determined by AFQT.

HS = High School Graduate.

B = Race as Black.

Age = Age at Entry.

## *APPENDIX B:* UNDESIRABLE CAUSES FOR LOSS

Following are narrative descriptions of actions or types of discharge/separation which are categorized as a loss for undesirable causes for the purposes of this study.

AWOL or desertion
AWOL or misconduct
Conviction by civil courts
Dishonorable or bad conduct discharge for desertion
Dishonorable or bad conduct discharge for other than desertion
Disloyal or subversive actions
Conscientious objection
Concealment of juvenile records
Essential to health, safety, or best interests of the Air Force
Failure to meet minimum standards
For the good of the service
Fraudulent enlistment
Involuntary marginal producer
Homosexuality
Inaptitude or unsuitability
Obesity
Unfitness, dishonor of debts
Unfitness, drug addiction
Unfitness, involved in incidents either civilian or military
Unfitness, non-support of dependents
Unfitness, sexual perversion
Unfitness, shirking
Unfitness, unsanitary habits
Unsuitable, alcoholism
Unsuitable, apathy or defective attitude
Unsuitable, behavior disorder
Unsuitable, enuresis
Unsuitable, financial irresponsibility

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## *APPENDIX C:* TOTAL 1958-1969 LOSSES FOR UNDESIRABLE CAUSES BY CATEGORY

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| LOSS | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| THRU 3 MOS | 0.23 | 0.34 | 0.33 | 3.70 | 0.78 | 0.79 | 0.43 | 0.36 | 0.36 | 0.31 | 0.51 | 0.51 | 0.82 | 1.11 | 1.10 |
| THRU 6 MOS | 0.46 | 0.52 | 0.52 | 3.70 | 1.49 | 1.50 | 0.65 | 0.57 | 0.57 | 0.52 | 0.72 | 0.72 | 2.04 | 1.82 | 1.83 |
| THRU 9 MOS | 0.92 | 0.72 | 0.73 | 3.70 | 2.91 | 2.92 | 1.09 | 0.83 | 0.83 | 0.95 | 0.95 | 0.95 | 4.19 | 2.87 | 2.90 |
| THRU 12 MOS | 1.85 | 0.93 | 0.94 | 3.70 | 4.03 | 4.03 | 1.96 | 1.08 | 1.09 | 1.47 | 1.19 | 1.19 | 6.54 | 4.39 | 4.44 |
| THRU 15 MOS | 2.08 | 1.16 | 1.17 | 3.70 | 5.69 | 5.68 | 2.17 | 1.39 | 1.39 | 1.94 | 1.46 | 1.47 | 8.59 | 6.14 | 6.19 |
| THRU 18 MOS | 2.08 | 1.37 | 1.37 | 7.41 | 7.12 | 7.12 | 2.39 | 1.65 | 1.65 | 2.55 | 1.75 | 1.77 | 10.53 | 7.80 | 7.86 |
| THRU 21 MOS | 2.77 | 1.56 | 1.57 | 14.81 | 8.39 | 8.42 | 3.48 | 1.90 | 1.90 | 2.98 | 2.02 | 2.04 | 12.99 | 9.25 | 9.33 |
| THRU 24 MOS | 3.46 | 1.78 | 1.79 | 14.81 | 9.81 | 9.84 | 4.13 | 2.17 | 2.18 | 3.45 | 2.28 | 2.30 | 15.34 | 10.60 | 10.71 |
| THRU 27 MOS | 3.70 | 2.00 | 2.01 | 14.81 | 10.89 | 10.91 | 4.35 | 2.44 | 2.45 | 4.03 | 2.52 | 2.55 | 16.77 | 11.80 | 11.91 |
| THRU 30 MOS | 4.39 | 2.17 | 2.18 | 14.81 | 11.77 | 11.79 | 5.00 | 2.64 | 2.66 | 4.39 | 2.74 | 2.78 | 18.40 | 12.75 | 12.88 |
| THRU 33 MOS | 5.08 | 2.35 | 2.36 | 14.81 | 12.61 | 12.63 | 5.65 | 2.85 | 2.87 | 4.82 | 2.93 | 2.98 | 19.84 | 13.63 | 13.78 |
| THRU 36 MOS | 5.31 | 2.49 | 2.50 | 18.52 | 13.48 | 13.50 | 6.09 | 3.03 | 3.04 | 5.19 | 3.10 | 3.15 | 20.96 | 14.35 | 14.51 |
| THRU 39 MOS | 5.77 | 2.63 | 2.64 | 18.52 | 13.97 | 14.00 | 6.52 | 3.18 | 3.20 | 5.54 | 3.23 | 3.29 | 22.29 | 15.00 | 15.17 |
| THRU 42 MOS | 6.24 | 2.74 | 2.75 | 18.52 | 14.47 | 14.49 | 6.96 | 3.31 | 3.33 | 5.87 | 3.35 | 3.41 | 23.62 | 15.49 | 15.68 |

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| LOSS | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| THRU 3 MOS | 0.36 | 0.57 | 0.56 | 0.56 | 0.86 | 0.82 | 1.93 | 1.73 | 1.75 | 0.77 | 1.04 | 1.01 | 0.79 | 1.78 | 1.43 |
| THRU 6 MOS | 0.67 | 0.83 | 0.82 | 0.84 | 1.13 | 1.09 | 2.80 | 2.49 | 2.52 | 1.14 | 1.40 | 1.37 | 1.07 | 2.15 | 1.77 |
| THRU 9 MOS | 1.26 | 1.13 | 1.13 | 1.30 | 1.45 | 1.43 | 4.87 | 4.04 | 4.11 | 1.84 | 1.98 | 1.96 | 1.65 | 2.58 | 2.26 |
| THRU 12 MOS | 1.95 | 1.49 | 1.50 | 1.93 | 1.81 | 1.83 | 7.28 | 5.81 | 5.94 | 2.74 | 2.63 | 2.64 | 2.27 | 3.05 | 2.78 |
| THRU 15 MOS | 2.57 | 1.90 | 1.92 | 2.66 | 2.20 | 2.26 | 9.97 | 7.78 | 7.98 | 3.76 | 3.35 | 3.40 | 3.07 | 3.52 | 3.37 |
| THRU 18 MOS | 3.30 | 2.33 | 2.35 | 3.37 | 2.60 | 2.70 | 12.49 | 9.60 | 9.87 | 4.74 | 4.04 | 4.12 | 3.89 | 4.05 | 3.99 |
| THRU 21 MOS | 3.93 | 2.71 | 2.74 | 4.01 | 2.96 | 3.09 | 14.75 | 11.30 | 11.61 | 5.63 | 4.67 | 4.78 | 4.66 | 4.50 | 4.56 |
| THRU 24 MOS | 4.57 | 3.07 | 3.10 | 4.60 | 3.30 | 3.46 | 16.66 | 12.74 | 13.10 | 6.42 | 5.23 | 5.38 | 5.37 | 4.92 | 5.08 |
| THRU 27 MOS | 5.23 | 3.40 | 3.45 | 5.33 | 3.63 | 3.85 | 18.77 | 14.20 | 14.61 | 7.35 | 5.80 | 5.98 | 6.17 | 5.43 | 5.69 |
| THRU 30 MOS | 5.72 | 3.69 | 3.74 | 5.90 | 3.90 | 4.15 | 20.32 | 15.24 | 15.70 | 8.08 | 6.22 | 6.45 | 6.70 | 5.76 | 6.09 |
| THRU 33 MOS | 6.24 | 3.95 | 4.01 | 6.34 | 4.12 | 4.40 | 21.52 | 16.11 | 16.60 | 8.63 | 6.57 | 6.82 | 7.20 | 6.02 | 6.43 |
| THRU 36 MOS | 6.69 | 4.17 | 4.23 | 6.80 | 4.31 | 4.63 | 22.80 | 14.87 | 17.41 | 9.22 | 6.88 | 7.16 | 7.67 | 6.25 | 6.74 |
| THRU 39 MOS | 7.12 | 4.36 | 4.42 | 7.15 | 4.47 | 4.81 | 23.84 | 17.50 | 18.08 | 9.67 | 7.14 | 7.44 | 8.10 | 6.43 | 7.01 |
| THRU 42 MOS | 7.55 | 4.51 | 4.58 | 7.58 | 4.62 | 4.99 | 25.11 | 17.97 | 18.62 | 10.22 | 7.35 | 7.70 | 8.54 | 6.56 | 7.25 |

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| LOSS | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| THRU 3 MOS | 0.88 | 1.31 | 1.24 | 0.80 | 1.67 | 1.40 | 1.40 | 4.03 | 2.82 | 3.22 | 8.00 | 6.50 | 1.77 | 5.33 | 3.84 |
| THRU 6 MOS | 2.23 | 2.16 | 2.17 | 1.18 | 2.15 | 1.85 | 1.84 | 4.84 | 3.46 | 4.99 | 10.38 | 8.69 | 2.49 | 6.65 | 4.91 |
| THRU 9 MOS | 4.94 | 4.25 | 4.36 | 1.98 | 2.97 | 2.66 | 2.39 | 5.23 | 3.92 | 6.19 | 11.16 | 9.60 | 3.17 | 7.17 | 5.49 |
| THRU 12 MOS | 7.99 | 6.57 | 6.79 | 2.64 | 3.88 | 3.55 | 2.82 | 5.61 | 4.33 | 7.69 | 12.57 | 11.04 | 3.83 | 7.88 | 6.18 |
| THRU 15 MOS | 11.23 | 9.10 | 9.44 | 3.87 | 4.84 | 4.54 | 3.38 | 6.21 | 4.91 | 9.51 | 13.76 | 12.42 | 4.64 | 8.67 | 6.98 |
| THRU 18 MOS | 14.13 | 11.40 | 11.83 | 4.89 | 5.78 | 5.50 | 3.97 | 6.59 | 5.39 | 11.43 | 15.09 | 13.94 | 5.52 | 9.36 | 7.75 |
| THRU 21 MOS | 17.59 | 13.49 | 14.14 | 5.93 | 6.62 | 6.41 | 4.26 | 6.78 | 5.62 | 11.90 | 15.26 | 14.20 | 5.84 | 9.54 | 7.99 |
| THRU 24 MOS | 19.95 | 15.50 | 16.21 | 6.80 | 7.42 | 7.23 | 4.58 | 7.01 | 5.89 | 12.42 | 15.62 | 14.61 | 6.20 | 9.82 | 8.30 |
| THRU 27 MOS | 22.97 | 17.77 | 18.60 | 7.82 | 8.34 | 8.18 | 4.84 | 7.12 | 6.07 | 12.63 | 15.95 | 14.91 | 6.45 | 10.00 | 8.51 |
| THRU 30 MOS | 24.76 | 19.12 | 20.01 | 8.47 | 8.91 | 8.77 | 5.03 | 7.31 | 6.26 | 12.79 | 16.12 | 15.07 | 6.63 | 10.18 | 8.69 |
| THRU 33 MOS | 26.90 | 20.16 | 21.23 | 9.14 | 9.36 | 9.29 | 5.03 | 7.32 | 6.27 | 12.79 | 16.12 | 15.07 | 6.63 | 10.19 | 8.70 |
| THRU 36 MOS | 28.32 | 21.12 | 22.26 | 9.69 | 9.76 | 9.74 | 5.04 | 7.34 | 6.29 | 12.79 | 16.12 | 15.07 | 6.64 | 10.20 | 8.71 |
| THRU 39 MOS | 29.67 | 21.80 | 23.04 | 10.22 | 10.05 | 10.10 | 5.07 | 7.35 | 6.30 | 12.79 | 16.12 | 15.07 | 6.67 | 10.21 | 8.72 |
| THRU 42 MOS | 30.84 | 22.46 | 23.78 | 10.73 | 10.31 | 10.44 | 5.07 | 7.35 | 6.30 | 12.79 | 16.12 | 15.07 | 6.67 | 10.21 | 8.72 |

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| LOSS | 46 | 47 | 48 | 49 | 50 | 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| THRU 3 MOS | 0.67 | 0.74 | 1.80 | 1.66 | 0.73 | 1.67 | 0.82 | 0.88 | 0.87 | 0.16 | 0.35 | 0.29 | 1.08 | 0.33 | 0.52 |
| THRU 6 MOS | 0.96 | 1.09 | 2.92 | 2.46 | 0.98 | 2.50 | 1.22 | 1.21 | 1.21 | 0.25 | 0.53 | 0.76 | 1.93 | 0.50 | 0.73 |
| THRU 9 MOS | 1.46 | 1.26 | 5.01 | 3.81 | 1.26 | 4.01 | 1.94 | 1.66 | 1.68 | 0.45 | 0.74 | 2.63 | 3.08 | 0.79 | 0.96 |
| THRU 12 MOS | 2.06 | 1.56 | 7.43 | 5.64 | 1.61 | 5.80 | 2.78 | 2.17 | 2.23 | 0.74 | 0.95 | 3.97 | 4.06 | 1.16 | 1.20 |
| THRU 15 MOS | 2.77 | 1.89 | 10.08 | 7.59 | 1.98 | 7.81 | 3.75 | 2.74 | 2.84 | 1.20 | 1.17 | 6.02 | 5.49 | 1.60 | 1.46 |
| THRU 18 MOS | 3.49 | 2.23 | 12.56 | 9.40 | 2.35 | 9.68 | 4.71 | 3.30 | 3.43 | 1.53 | 1.36 | 7.71 | 6.77 | 2.11 | 1.75 |
| THRU 21 MOS | 4.12 | 2.54 | 14.87 | 11.02 | 2.69 | 11.35 | 5.57 | 3.80 | 3.97 | 1.84 | 1.55 | 9.64 | 7.72 | 2.63 | 2.00 |
| THRU 24 MOS | 4.72 | 2.83 | 16.73 | 12.47 | 3.02 | 12.84 | 6.33 | 4.26 | 4.46 | 2.35 | 1.75 | 11.57 | 8.84 | 3.11 | 2.24 |
| THRU 27 MOS | 5.41 | 3.12 | 18.74 | 13.90 | 3.33 | 14.33 | 7.20 | 4.73 | 4.97 | 2.70 | 1.97 | 13.32 | 9.52 | 3.62 | 2.47 |
| THRU 30 MOS | 5.92 | 3.36 | 20.16 | 14.92 | 3.61 | 15.39 | 7.84 | 5.08 | 5.35 | 3.06 | 2.13 | 14.66 | 10.13 | 4.08 | 2.68 |
| THRU 33 MOS | 6.35 | 3.56 | 21.42 | 15.79 | 3.84 | 16.29 | 8.37 | 5.38 | 5.67 | 3.41 | 2.30 | 15.42 | 11.01 | 4.42 | 2.87 |
| THRU 36 MOS | 6.77 | 3.74 | 22.55 | 16.55 | 4.04 | 17.07 | 8.89 | 5.65 | 5.96 | 3.70 | 2.43 | 16.65 | 11.68 | 4.77 | 3.03 |
| THRU 39 MOS | 7.12 | 3.89 | 23.54 | 17.17 | 4.20 | 17.73 | 9.32 | 5.86 | 6.20 | 4.00 | 2.56 | 17.46 | 11.99 | 5.06 | 3.16 |
| THRU 42 MOS | 7.51 | 4.01 | 24.63 | 17.65 | 4.36 | 18.26 | 9.81 | 6.04 | 6.41 | 4.19 | 2.67 | 17.64 | 12.67 | 5.36 | 3.27 |

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| LOSS | 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70 | 71 | 72 | 73 | 74 | 75 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| THRU 3 MOS | 0.43 | 1.52 | 0.48 | 0.85 | 0.63 | 2.43 | 0.73 | 1.49 | 1.12 | 1.33 | 2.17 | 2.83 | 5.26 | 6.50 | 0.19 |
| THRU 6 MOS | 1.15 | 2.26 | 0.69 | 1.12 | 1.44 | 3.17 | 0.93 | 1.84 | 1.98 | 2.31 | 2.17 | 3.49 | 10.53 | 8.68 | 0.38 |
| THRU 9 MOS | 2.62 | 3.07 | 1.13 | 1.45 | 3.51 | 4.49 | 1.69 | 2.30 | 4.69 | 4.10 | 2.17 | 3.95 | 10.53 | 9.60 | 1.00 |
| THRU 12 MOS | 4.74 | 4.25 | 1.71 | 1.84 | 6.00 | 5.90 | 2.38 | 2.81 | 7.48 | 6.25 | 2.54 | 4.36 | 10.53 | 11.04 | 1.56 |
| THRU 15 MOS | 7.15 | 5.59 | 2.42 | 2.25 | 8.91 | 7.42 | 3.42 | 3.36 | 10.53 | 8.60 | 3.26 | 4.94 | 10.53 | 12.43 | 2.41 |
| THRU 18 MOS | 9.34 | 6.94 | 3.22 | 2.66 | 11.43 | 8.91 | 4.45 | 3.96 | 13.37 | 10.64 | 3.99 | 5.41 | 10.53 | 13.95 | 3.08 |
| THRU 21 MOS | 11.54 | 7.95 | 3.94 | 3.02 | 13.92 | 10.19 | 5.51 | 4.49 | 15.93 | 12.76 | 4.71 | 5.63 | 10.53 | 14.22 | 3.80 |
| THRU 24 MOS | 13.53 | 8.94 | 4.58 | 3.37 | 16.10 | 11.25 | 6.32 | 4.98 | 18.33 | 14.56 | 5.07 | 5.91 | 15.79 | 14.61 | 4.67 |
| THRU 27 MOS | 15.19 | 9.85 | 5.06 | 3.75 | 18.20 | 12.41 | 7.18 | 5.58 | 20.89 | 16.82 | 5.43 | 6.08 | 26.32 | 14.87 | 5.37 |
| THRU 30 MOS | 16.61 | 10.54 | 5.59 | 4.14 | 19.67 | 13.26 | 7.69 | 5.97 | 22.79 | 17.85 | 5.43 | 6.27 | 26.32 | 15.03 | 5.97 |
| THRU 33 MOS | 17.87 | 11.21 | 6.02 | 4.27 | 20.84 | 14.00 | 8.43 | 6.28 | 24.13 | 18.99 | 5.80 | 6.27 | 26.32 | 15.03 | 6.43 |
| THRU 36 MOS | 18.75 | 11.84 | 6.50 | 4.47 | 21.90 | 14.65 | 8.97 | 6.58 | 25.27 | 19.93 | 5.80 | 6.29 | 26.32 | 15.03 | 6.95 |
| THRU 39 MOS | 19.65 | 12.36 | 6.81 | 4.65 | 22.80 | 15.19 | 9.31 | 6.84 | 26.20 | 20.59 | 5.80 | 6.31 | 26.32 | 15.03 | 7.38 |
| THRU 42 MOS | 20.27 | 12.80 | 7.10 | 4.82 | 23.43 | 15.67 | 9.81 | 7.06 | 27.05 | 21.26 | 5.80 | 6.31 | 26.32 | 15.03 | 7.57 |

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| LOSS | 76 | 77 | 78 | 79 | 80 | 81 | 82 | 83 | 84 | 85 | 86 | 87 | 88 | 89 | 90 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| THRU 3 MOS | 0.37 | 0.37 | 0.59 | 0.56 | 1.08 | 0.96 | 1.47 | 2.37 | 3.86 | 0.42 | 0.76 | 0.64 | 2.29 | 0.53 | 0.92 |
| THRU 6 MOS | 0.58 | 0.74 | 0.83 | 1.11 | 1.41 | 1.56 | 1.90 | 2.71 | 4.94 | 0.61 | 1.01 | 1.43 | 3.14 | 1.00 | 1.23 |
| THRU 9 MOS | 0.82 | 1.46 | 1.10 | 2.45 | 1.88 | 3.48 | 2.53 | 2.71 | 5.53 | 1.00 | 1.30 | 3.42 | 4.36 | 2.16 | 1.62 |
| THRU 12 MOS | 1.05 | 2.48 | 1.40 | 4.08 | 2.42 | 5.42 | 3.24 | 3.05 | 6.22 | 1.48 | 1.62 | 5.83 | 5.79 | 3.56 | 2.05 |
| THRU 15 MOS | 1.31 | 3.64 | 1.73 | 6.01 | 2.99 | 7.66 | 4.02 | 3.73 | 7.03 | 2.09 | 1.97 | 8.60 | 7.34 | 5.21 | 2.53 |
| THRU 18 MOS | 1.54 | 4.76 | 2.06 | 7.77 | 3.55 | 9.77 | 4.80 | 4.41 | 7.80 | 2.75 | 2.32 | 11.06 | 8.85 | 6.74 | 3.00 |
| THRU 21 MOS | 1.76 | 5.90 | 2.38 | 9.47 | 4.05 | 11.72 | 5.53 | 5.08 | 8.03 | 3.39 | 2.64 | 13.47 | 10.09 | 8.23 | 3.42 |
| THRU 24 MOS | 1.99 | 6.93 | 2.68 | 10.97 | 4.49 | 13.49 | 6.20 | 5.76 | 8.33 | 3.97 | 2.94 | 15.63 | 11.17 | 9.56 | 3.80 |
| THRU 27 MOS | 2.22 | 7.87 | 2.95 | 12.34 | 4.98 | 15.36 | 7.00 | 6.78 | 8.54 | 4.48 | 3.26 | 17.68 | 12.33 | 10.81 | 4.21 |
| THRU 30 MOS | 2.40 | 8.68 | 3.19 | 13.39 | 5.35 | 16.70 | 7.47 | 6.78 | 8.72 | 4.97 | 3.51 | 19.19 | 13.11 | 11.79 | 4.51 |
| THRU 33 MOS | 2.59 | 9.36 | 3.41 | 14.23 | 5.65 | 17.79 | 7.89 | 7.12 | 8.72 | 5.38 | 3.72 | 20.40 | 13.83 | 12.58 | 4.77 |
| THRU 36 MOS | 2.74 | 9.90 | 3.60 | 15.03 | 5.92 | 18.69 | 8.27 | 7.12 | 8.73 | 5.80 | 3.90 | 21.42 | 14.47 | 13.29 | 5.01 |
| THRU 39 MOS | 2.88 | 10.42 | 3.75 | 15.67 | 6.15 | 19.39 | 8.58 | 7.12 | 8.75 | 6.10 | 4.06 | 22.32 | 14.98 | 13.88 | 5.20 |
| THRU 42 MOS | 3.00 | 10.83 | 3.89 | 16.14 | 6.36 | 20.09 | 8.85 | 7.12 | 8.75 | 6.40 | 4.20 | 22.97 | 15.45 | 14.35 | 5.38 |